

# COEUR D'ALENE KOA (PWS #1280200) SOURCE WATER ASSESSMENT REPORT

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## State of Idaho Department of Environmental Quality

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## Source Water Assessment for Coeur d'Alene KOA Campground

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality (DEQ) is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like Coeur d'Alene KOA Campground, recharge zones were delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for the Coeur d'Alene KOA (PWS #1280200)*, describes factors used to assess susceptibility to contamination. The analysis relies upon information from the well logs, an inventory of land use inside the delineation boundaries, well site characteristics, potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for Well #2 is attached.

This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

**Well Construction.** The Coeur d'Alene KOA Campground water system serves a seasonal campground and one private residence. It is located adjacent to Lake Coeur d'Alene's Wolf Lodge Bay in Kootenai County, Idaho. The Coeur d'Alene KOA Campground drinking water system consists of two wells, designated Well #1 and Well #2. Well #1 was drilled in approximately 1970. Well #1 was evaluated in May 2000 and found not to comply with the *Idaho Rules for Public Water Systems* because the location of a sewer line is closer than the required minimum of 50 feet from the well. In addition, the well is shallow and susceptible to surface water runoff. A second well has been under construction to replace Well #1. Mike Nelson at Panhandle Health should be contacted about disconnecting Well #1 from the public water system by the start of the 2003 camping season. For this reason, Well #2 will be the focus of this report.

The drilling of Well #2 was completed in September of 2000. Well #2 will be the sole source of water for the campground in the 2003 season. It has been estimated that the well generates 25 GPM. The well is 400' deep. It uses a six-inch steel casing that is .280" thick. The steel casing passes through layers of multi-colored shale of varying densities and terminates at 40'. It was sealed to 40' with bentonite. A 4" PVC liner was installed from 20' to 400'. Water was first encountered at 75' and again at 295' and 315'. The well was screened from 340' to 400'. The static water level in the well is 71'. The well meets construction standards and has been maintained appropriately. It is located outside the 100-year floodplain. A well house containing the wellhead and pump controls was being constructed at the time this report was being generated. This will provide protection against weather conditions and provide a measure of security for the system.

**Well Site Characteristics.** Hydrologic sensitivity scores are derived from information on the well log and from the soil drainage classification inside the recharge zone delineated for Well #2. There are sewer lines for the RV park located within the 1000- foot area of the well head. However, these lines are not within the recharge zone of Well #2. Soils covering 100 per cent of the recharge zone delineated for Coeur d'Alene KOA Campground are well drained and consequently Well #2 was assigned a low hydrologic sensitivity score. The well is relatively deep and was drilled through solid layers of shale that may act as a barrier to contaminants moving underground. The well is located upgradient from Lake Coeur d'Alene. In May of 2001, a Ground Water Under Direct Influence (GWUDI) field survey was completed and Well #2 was determined to be a groundwater source.

**Potential Contaminant Inventory.** There are no reported potential contaminant sites located within a 1000-foot radius of Well #2's recharge zone. The well received low potential contaminant/land use scores in all chemical categories. It is located in a forested area adjacent to national forest land. While not an eminent threat, extensive logging in the watershed uphill from the well could increase surface runoff and decrease the amount of groundwater available to the Coeur d'Alene KOA water system.

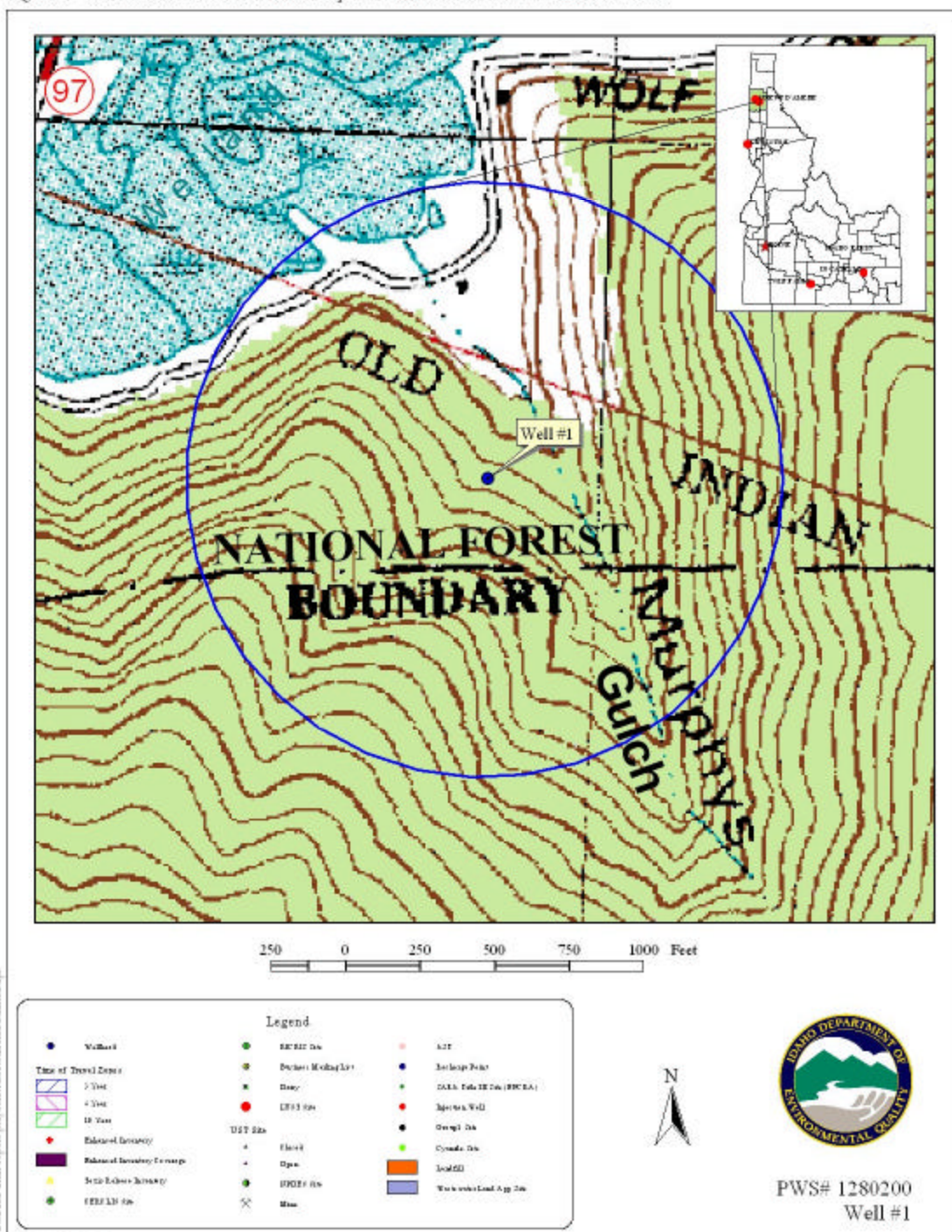
**Water Quality History.** Coeur d'Alene KOA Campground's Well #2 has a good water quality history. The water system samples for total coliform quarterly. Well #2 water has not tested positive for total coliform since its installation in 2000. Well #2 is also sampled for nitrates annually, with measurements ranging from .123 to .151 mg/L. The maximum contaminant level for nitrates is 10 mg/L.

The water system has already taken steps to ensure continued water quality. Well #2 was drilled in accordance with the *Idaho Rules for Public Drinking Water Systems* and was located in an area free from contaminant sites. The system operator has just completed the installation of a well house to enclose the wellhead and pump appurtenances. This will protect the system from the elements and tampering. The water system can best achieve drinking water protection by continuing to operate the water system in compliance with the *Idaho Rules for Public Drinking Water Systems*.

**Susceptibility to Contamination.** Well #2 received an overall susceptibility ranking of low in all chemical categories. A copy of the susceptibility analysis for this system along with a map showing the Well #2's location is included in this assessment. Formulas used to compute final scores and susceptibility rankings are provided on the page that follows the Susceptibility Analysis Worksheet.

**Source Water Protection.** This assessment should be used as a basis for determining new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, maintaining and improving protection levels is always important. Whether the source is in a pristine area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality is to act now to protect valuable water supply resources.

Figure 1. Coeur d'Alene KOA Delineation Map and Potential Contaminant Source Locations



Like all public water systems, there are a number of voluntary drinking water protection measures that Coeur d'Alene KOA can implement. Every system should draw up a contingency plan that outlines emergency response activities with special attention paid to securing an alternative source of water should the water system become disabled. There is a simple fill-in-the-blanks form available on the DEQ web site ([www.deq.state.id.us/water/water1.htm](http://www.deq.state.id.us/water/water1.htm)) to guide systems through the emergency planning process.

The system should also consider developing a drinking water protection plan that addresses public education and management of potential contaminant sites. Campground visitors and employees should be made aware of the location of the well's source water assessment area. They should be advised of methods for the proper disposal of household hazardous wastes and of septic system maintenance procedures. The well's source water assessment area should be considered when siting new waste disposal systems, roads and buildings. Logging activity in the national forest watershed adjacent to the well's source water assessment area should be monitored. The water system may want to establish partnerships with state and federal agencies to ensure that forestry management practices are followed during logging and road-building operations.

Coeur d'Alene KOA should investigate ground water stewardship programs such as Home\*A\*Syst on the web ([www.uwex.edu/homeasyst](http://www.uwex.edu/homeasyst)) or by phone (608) 262-0024. These programs are designed to help well owners assess everyday activities for their potential impact on drinking water quality. Topics include areas such as petroleum product storage, septic system maintenance and the handling and storing of lawn and household chemicals. Drinking water protection activities should be aimed at long-term management strategies. In the long run, it is cheaper to do preventative maintenance than to replace a water source damaged through neglect. The result will be safe and stable drinking water for the future.

**Assistance.** Public water suppliers may call the following offices with questions about this assessment and to request help with drinking water protection planning.

|                                   |  |
|-----------------------------------|--|
| Coeur d'Alene Regional DEQ Office | (208) 769-1422   |
| State IDEQ Office, Boise          | (208) 373-0502   |
| Website                           | <a href="http://www.deq.state.id.us/water/water1.htm">www.deq.state.id.us/water/water1.htm</a> |
| Idaho Rural Water Association     | (800) 962-3257   |

# **Attachment A**

## **Coeur d'Alene KOA Susceptibility Analysis Worksheet**

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.375)

Ground Water Final Susceptibility Scoring

0-5 = Low Susceptibility

6-12 = Moderate Susceptibility

> 13 = High Susceptibility

|   |                                 |           |           |           |                 |
|---|---------------------------------|-----------|-----------|-----------|-----------------|
| 1. System Construction  |                                 | SCORE     |           |           |                 |
| Drill Date  | 9/15/2000                       |           |           |           |                 |
| Driller Log Available   | YES                             |           |           |           |                 |
| Sanitary Survey (if yes, indicate date of last survey)        | YES                             | 2000      |           |           |                 |
| Well meets IDWR construction standards                        | YES                             | 0         |           |           |                 |
| Wellhead and surface seal maintained                          | YES                             | 0         |           |           |                 |
| Casing and annular seal extend to low permeability unit       | YES                             | 0         |           |           |                 |
| Highest production 100 feet below static water level          | YES                             | 0         |           |           |                 |
| Well located outside the 100 year flood plain                 | YES                             | 0         |           |           |                 |
| Total System Construction Score                               |                                 | 0         |           |           |                 |
| 2. Hydrologic Sensitivity                                     |                                 |           |           |           |                 |
| Soils are poorly to moderately drained                        | YES                             | 0         |           |           |                 |
| Vadose zone composed of gravel, fractured rock or unknown     | NO                              | 0         |           |           |                 |
| Depth to first water > 300 feet                               | NO                              | 1         |           |           |                 |
| Aquitard present with > 50 feet cumulative thickness          | YES                             | 0         |           |           |                 |
| Total Hydrologic Score  |                                 | 1         |           |           |                 |
| 3. Potential Contaminant / Land Use - ZONE 1A                 |                                 | IOC Score | VOC Score | SOC Score | Microbial Score |
| Land Use Zone 1A  | RANGELAND, WOODLAND, BASALT     | 0         | 0         | 0         | 0               |
| Farm chemical use high  | NO                              | 0         | 0         | 0         |                 |
| IOC, VOC, SOC, or Microbial sources in Zone 1A                | NO                              | NO        | NO        | NO        | NO              |
| Total Potential Contaminant Source/Land Use Score - Zone 1A   |                                 | 0         | 0         | 0         | 0               |
| Potential Contaminant / Land Use - ZONE 1B                    |                                 |           |           |           |                 |
| Contaminant sources present (Number of Sources)               | NO                              | 0         | 0         | 0         | 0               |
| (Score = # Sources X 2 ) 8 Points Maximum                     |                                 | 0         | 0         | 0         | 0               |
| Sources of Class II or III leachable contaminants or          | NO                              | 0         | 0         | 0         |                 |
| 4 Points Maximum  |                                 | 0         | 0         | 0         |                 |
| Zone 1B contains or intercepts a Group 1 Area                 | NO                              | 0         | 0         | 0         | 0               |
| Land use Zone 1B  | Less Than 25% Agricultural Land | 0         | 0         | 0         | 0               |
| Total Potential Contaminant Source / Land Use Score - Zone 1B |                                 | 0         | 0         | 0         | 0               |
| Cumulative Potential Contaminant / Land Use Score             |                                 | 0         | 0         | 0         | 0               |
| 4. Final Susceptibility Source Score                          |                                 |           |           |           |                 |
|   |                                 | 1         | 1         | 1         | 1               |
| 5. Final Well Ranking   |                                 |           |           |           |                 |
|   |                                 | Low       | Low       | Low       | Low             |



## POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (IDEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100-year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by IDEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.